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ABSTRACT

This article presents findings from the literature and professionals of music education concerning the characteristics of problem singers, the manifestations of the problem, suggested causes of poor singing, and possible procedures for correcting the problem. It also attempts to determine any parallels between existing research findings and informal observation. In an attempt to learn more about children who cannot match pitch, research was conducted in the related professional literature, knowledgeable teachers were asked to participate in interviews and to complete questionnaires, and work was done with children who had problems singing. All teachers contacted for this study cited problems with children who cannot sing well and had tried many different ideas to help correct the problem. Several areas have been investigated by researchers in an attempt to gain insight into the inability to sing. No one characteristic appears to be a common cause for poor singing. Factors that do seem to be prevalent in the discussion of the problem singer include: (1) gender; (2) motivation; (3) age, accuracy in singing improves with age; and (4) solo and group singing. Some children, especially prior to sixth grade, match pitch when singing alone but have difficulty when singing in a group. Manifestations of the problem are grouped into incorrect pitch, speaking singers, dependence, and coordination. Causes of poor singing include home environment, perception, melodic content, text, and range and tessitura. Social factors, experience, and education are discussed. Remedial techniques are suggested. (DK)

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# An Examination of Selected Aspects of Pitch-Matching Problems Among Children

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# An Examination of Selected Aspects of Pitch-Matching Problems Among Children

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## Purpose

For those who can sing without effort and who have no trouble singing any desired pitch within their singing range, the inability of others to sing freely and easily is a continuing mystery. Why non-singers cannot reproduce a pitch or sing a recognizable melody is a matter for much discussion and research. Music teachers who try to help non-singers have many opinions about both causes and remedies, while research and experience have begun to provide a few answers.

Instructors who attempt to help children who sing poorly have devised solutions that work for them, but may not be found in the professional literature. Their opinions are a result of informal observation, conversations with students, and experimentation. This article presents findings from the literature and from professionals concerning the characteristics of problem singers, the manifestations of the problem, suggested causes of poor singing, and possible procedures for correcting the problem. It also attempts to determine any parallels between existing research findings and informal observation.

## Method

In an attempt to learn more about children who cannot match pitch, research was conducted in the related professional literature, knowledgeable teachers were asked to participate in interviews and to complete questionnaires, and work was done with children who had problems with singing. Teachers who participated in this study were selected on the basis of professional reputation and recommendations from colleagues.

Of those teachers involved in this project, **Grigsby, Palmer, Godwin, Moffett, Collins, DesForges** and **Haworth** are veteran music teachers, with between 9 and 26 years experience in the classroom. Most of the teachers were from Florida, both large and small urban areas. Two of the teachers were from West Virginia. **Roberts** is associate music director at a large church and has directed a children's choir for many years. **Odom** has done much research in the field and teaches in the music department at a small denominational college. **Gackle** is on the faculty of VoiceCare Network, an inter-disciplinary group of specialists which offers information to those interested in voice care and use.

All teachers contacted for this study cited problems with children who cannot sing well and had tried many different ideas to help correct the problem. All teachers were equally concerned that the child not develop a negative opinion of their own poor singing, and were frustrated at their lack of success with every child who needed help.

## Characteristics of Problem Singers

Several areas have been investigated by researchers in an attempt to gain insight into the inability to sing. No one characteristic appears to be a common cause for poor singing. However, several factors seem to be prevalent in the discussion of the problem singer. These factors are explained in the following discussion.

### Gender

While students who have difficulties in matching pitch do not meet a predictable profile, these children are more likely to be male than female. Although Apfelstadt (1984) believes that gender has no relationship to vocal accuracy, Davies and Roberts (1975) reported that 36.6% of the boys in their study were likely to have problems matching pitch, while only 18.3% of the girls had similar problems. Furthermore 10% of the boys always sang completely out of tune with little variation in pitch. In addition, they found that boys show more problems with pitch matching by the age of four and that the problems continue until adolescence. Other research has also found that girls were more accurate in their singing than boys, and that the difference was more noticeable in group singing (Goetze and Horii, 1989; Goetze, 1985). Franklin (1981) suggested that the brain is organized differently for the two sexes and this may be a reason for 'the significantly higher proportion of boys than girls' who can not match pitch.

When discussing the question of gender in connection with pitch-matching, most authorities state that boys are more likely to sing below pitch than girls. The attitude of the boys may be the reason for this phenomenon. Many young boys want to sound like adult men and try to manufacture a mature sound (Palmer, 1991; Godwin, 1991; Kemp, 1989, p. 10), since they do not understand the physical changes that need to occur before the voice naturally becomes lower. Grigsby (1991) believes that boys may not want to sound like men, but that they do not want to sound like girls. Collins (1991) said that her male students who do not sing well may physically mature later and have not yet learned to coordinate the singing apparatus.

Petzold (1969) believed that the differences are not based on the ability to match pitch, but on attitude, motivation and amount of desire, especially in the upper grades. He says that boys do not show much improvement in singing as they progress from fifth grade to sixth, and may even show a decline in singing skills. This may be the result of a lack of confidence in singing and because they may not see singing as 'a natural musical response'.

### Motivation

It is suspected by teachers that the child who cannot be helped to sing may lack motivation (Roberts, 1991; Grigsby, 1991; Moffett, 1991), perhaps creating a situation where the student 'will not be helped' rather than 'cannot be helped'. The student may not realize the desire of the teacher for good singing (Haworth, 1991), and sufficient motivation may be developed when the child is convinced of the instructor's goals. Roberts (1991) suggested that directing the motivation elsewhere, toward winning a game or earning stickers, may remove the focus from singing and make it unnecessary for the child to be motivated directly to sing. Therefore, singing may occur as a by-product of some other motivation.

Grigsby (1991) noted that lack of motivation may be imparted by feedback from people of importance to the child. If the child's singing has been ridiculed, the child may truly think singing an impossibility. Many music teachers can cite examples of adults who state that they do not sing because of a childhood experience. Someone, perhaps even the music teacher, may have suggested to the child that the singing was below acceptable standards and did not encourage the child to perform correctly. The child may have ceased to sing and will not do so again, even many years after adulthood has been attained.

Children may be able to match pitch, but still not sing well (Atterbury, 1984; Welch, 1979a) because of a lack of both con-

centration and interest. For example, the child may not be able to remember the pitches long enough to sing them properly (Jones, 1971), and may not care that they are not singing well (Franklin, 1981).

**Age**

Accuracy in singing improves with age (Goetze, Cooper & Brown, 1990; Goetze, 1985) and vocal range also increases (Welch, 1979b; Buckton, 1977). Petzold (1969) reported that by the second grade, about 85% of the children could control their singing voices. Children who are unable to sing in tune are not cause for serious concern until they reach third grade or above, for the majority of third graders can sing accurately (Forcucci, 1975).

Of the children in third through sixth grades, 20% needed individualized, remedial help with singing (Forcucci, 1975). Smith (1973) found that only 35-40% of the sixth graders in his study sang in tune, although almost all the students had the potential for singing in tune. By the middle of the teen-age years, girls rarely have problems matching pitch (Davies & Roberts, 1975).

Collins (1991) and Gackle (1991) both believe that maturation may be the answer for a few children. These students may need more time to practice controlling the vocal mechanism than most of their classmates.

**Solo and Group Singing**

Some children can match pitch when singing alone, but have difficulty doing so when in a group (Cooper, 1990; Goetze, Cooper & Brown, 1990; Goetze, 1985), and boys appear to have more trouble singing with others than do girls. By the time children have reached the sixth grade, singing with other voices makes no difference in pitch matching ability (Goetze & Horii, 1989; R. S. Smith, 1973).

Children may not be matching pitch when singing in a group because they can not hear themselves. Their auditory feedback does not provide sufficient information for singing in tune (Joyner, 1969). Children may also decide not to use auditory feedback because they are listening to the surrounding sounds, and the skill of hearing both internal and external sounds at the same time has not been acquired (Goetze, 1985). This dual listening skill may be developed with maturation (Goetze & Horii, 1989).

## Manifestations of the Problem

Both the professional literature and interviews with singing instructors refers to different sources for pitch matching problems in singing. The following discussion seeks to explain some of the ways to address the problem.

**Incorrect Pitch**

Among the singing problems cited in the professional literature are children who do not sing the correct pitch (Grigsby, 1991; Palmer, 1991; Godwin, 1991; Moffett, 1991), who sing an octave below the correct pitch (DesForges, 1991; Palmer, 1991; Godwin, 1991; Moffett, 1991) and who sing above the correct pitch level (DesForges, 1991).

Interestingly enough, Odom (1991) has claimed a relationship between pitches sung by some children. To discover the relationship, Odom used the piano to find the pitch sung by the child, followed by the performance of tonal clusters to erase the memory of the tonality, and then asks the child to sing higher. The child usually sings a perfect 4th above the first pitch, resulting in a sol-do relationship. Odom believes that this may be the result of the dominant-tonic music in our society.

Kemp calls this child a 'transposing singer' (1989, p. 12). She says, however, that the student often sings a 4th or 5th **below** the melody. Both Kemp and Young (1971) have noted that these singers select their own key when singing, regardless of the key being used by the group. Kemp attributes this to inexperience, and says that the child may feel uncomfortable if the pitches are out of easy singing range.

**Speaking Singers**

The child who does not know how to vocalize on pitch may speak in preference to singing since that is the only way the vocal mechanism has been used (Jones, 1971). Some children sing more in tune in the lower pitch range (R. S. Smith, 1973). A possible reason for this phenomenon may be that they do not know how to completely switch from speaking to singing and may not be using the head voice. 'Conversational singers' are among those who do not know how to make the change, and do as much speaking as singing (Swanson, 1981).

**Dependence**

Other children have learned to sing, but do not do so freely or independently. Forcucci (1975) states that the dependent singer has limited experience and sings better when in a group. This child needs to 'lean' on stronger singers. The inability to sing well is discovered when solo or small group singing is done.

**Coordination**

The uncertain singer cannot coordinate all the elements of singing - mind, ears, breathing and vocal mechanism - in order to sing the melodic line (Forcucci, 1975). Leaning on more capable singers may not help, and, as a result, out-of-tune singing is done both when singing alone and with others.

A limited range singer cannot sing any song because the skills of making and controlling the pitches simultaneously has not been acquired. When individual instruction has helped to make the vocal cords more elastic and control has been gained over that elasticity, independence may be gradually obtained.

## Causes of Poor Singing

Many factors may influence singing ability. As with other aspects of this issue, no single cause for poor singing appears to be universal.

**Home Environment**

While families of lower economic status produce fewer singers (Welch, 1979b), home environment may or may not also influence singers. Franklin (1981) maintains that kindergarten children from musical homes usually sing well, while Apfelstadt (1984) believes that home music background and vocal accuracy may not be related.

Some instructors suspect home environment to be a cause for poor singing (DesForges, 1991, Odom, 1991, Gackle, 1991, Grigsby, 1991). Many teachers think that this may be due to a lack of singing in the home, either recorded singing or spontaneous singing by family members, for the child to experience. The style of vocalizing commonly heard in many popular songs played at home is not conducive to good singing habits or to good pitch matching, and it is believed that the imitation of this kind of singing may harm children's vocal mechanism and make it harder to match pitch correctly (DesForges, 1991; Grigsby, 1991). Godwin (1991) cites home and family factors also, but not in terms of the absence or availability of musical styles. She says that loud talking at home and yelling among siblings contributes to vocal problems.

Saunders (1988) believes that children learn to sing by imitating adult models. Just as they learn to speak by babbling random sounds and by echoing adult speech, so they may learn to sing by babbling and echoing. Therefore, lack of singing models in the

child's environment may result in incomplete concept formation in the use of the singing voice.

### Perception

It may be suggested that one of the causes for not producing the desired pitch in singing may be perceptual. A singer must be able to hear and audiate the pitch before it may be sung. However, some researchers disagree with this point of view (Apfelstadt, 1984). Roberts and Davies (1975) state that poor pitch matching and pitch discrimination are not related, and that tests of pitch discrimination alone will not separate singers from non-singers. Those who can sing accurately have no trouble hearing pitches, but those who are inaccurate singers may also hear pitches correctly (Goetze, Cooper & Brown, 1990). Porter (1977) stated that she found no evidence to suggest that poor pitch perception leads to poor singing. Instruction in melodic perception did not help singers improve either their pitch discrimination or their vocal accuracy on rote-songs (Apfelstadt, 1984).

As further evidence that inadequate pitch discrimination and singing may not be related, males, who usually have more singing problems than females, may tend to have better aural discrimination. Age and music training, as well as gender, may also play a part in pitch perception (Madsen, Edmonson & Madsen, 1969), although it seems that a vocal program is no more effective than an instrumental program in improving pitch perception (Buckton, 1977).

Joyner (1969), and Pedersen and Pedersen (1970) agree that those who cannot match pitch are deficient in pitch discrimination. Pedersen and Pedersen further state that there is a "fairly strong relationship between pitch discrimination and vocal pitch production." Goetze, Cooper & Brown (1990) agree that pitch matching and pitch discrimination are related. They speculate that teaching singing skills may contribute to the development of pitch discrimination, rather than teaching pitch discrimination to aid singing.

### Melodic Content

Some singers perform more accurately with melodic content than on single pitches (Goetze, 1985), perhaps because melodies are more musical and command more attention (Goetze, Cooper & Brown, 1990). This musical quality may be why some singers have difficulty in matching single pitches, but can successfully match pitches in a context of a pattern of pitches.

Melodies with smaller intervals, such as seconds and thirds, appear to be easier for children to sing (Goetze, 1985). Intervals larger than a fifth may require more control than the uncertain singer can develop in a short time (Jones, 1971). The easiest patterns to sing are the descending minor third (G to E), the ascending fourth (C to F), and the common patterns of 3-2-1 (E-D-C), 1-2 (C-D), and 1-2-3 (C-D-E). The easier intervals to produce appear to be descending, rather than ascending (Goetze, Cooper & Brown, 1990; Jones, 1971; Goetze, 1985).

A significant part of singing instruction is for the inexperienced singer to remember pitches and to remember the order of pitches in patterns (Saunders, 1988; Joyner, 1969). These pitch patterns, also called melodies, help the singer remember what is coming next and prepare the voice for it.

### Text

It has been suggested that children may be confused by the text of songs, and this confusion may prevent them from reproducing the correct pitch. Investigation in this area suggests that this may not the case. Children do not appear to be distracted by words. Indeed, text is one of the first elements of singing learned by children. This is usually followed by rhythm, melodic contour, and finally, exact pitches (Goetze, Cooper & Brown, 1990).

### Range and Tessitura

The range and tessitura of the songs found in children's music textbooks appears to have an effect on the ability of the students to sing the songs correctly (R. S. Smith, 1973). Many books used for children's singing have an inappropriately high singing range (Welch, 1979b; Davies & Roberts, 1975). Welch (1979b) found that children were expected to match their voices to the songs, rather than the teacher finding songs that matched the children's voices. He suggests that this may be one of the basic causes of poor singing. When adults are given music that is too high to be sung comfortably, they might refuse to sing. Children may not choose that option and will often sing under the proper pitch. If this practice continues long enough, it may become habitual.

Joyner's (1969) work in this area confirms that this scenario may be a frequent occurrence. He speculates that some children may find it uncomfortable to sing in the head register and prefer to sing on lower pitches, thus giving the impression that they can not match pitch. This practice may invite the ridicule of their classmates, which further encourages a negative attitude toward singing.

Songs selected for children should have a range of no more than a sixth and should center around middle C. Any songs using C or high D above middle C should either be ignored or transposed (Atterbury, 1984), although children can sing the C above middle C (Welch, 1979b). Jones (1971) agrees, having found a group pitch range of B below middle C to the B above. Songs which are sung low and soft, rather than loud and high, result in better singing (Joyner, 1969).

Singers with an extreme voice break around G or A above middle C have voices which are not operating well, and will sing poorly (Joyner, 1969). With help and experience, this can be corrected.

Haworth (1992) disagrees with the belief that many children's songs are pitched too high. She believes that children should usually sing between middle F and high F, since this gets the child out of the talking voice range, and thus promotes better pitch matching.

## Social Factors, Experience, and Education

A lack of practice in singing is suspected by many to be a primary cause of poor performance (Roberts, 1991; Odom, 1991; Gackle, 1991; Godwin, 1991). Odom (1991) cites the change in the use of singing in games and socialization experiences. He speculates that singing occupies a much different place in today's society than it did in the society of 20 years ago, and children do not often sing in organized choirs or in their play activities. Just as learning to jump rope or play baseball requires practice, more for some children than for others, so learning to sing may not be a natural skill for all children and may require practice.

Experience and education may be the most important factors in pitch matching (Murry, 1990; Goetze, Cooper & Brown, 1990). Roberts and Davies (1975) believe that poor singing is the result of poor education, not of physical disability. Goetze, Cooper and Brown (1990) agree that training may be the best method of helping students who have problems with both hearing and singing. Children who have not had practice in singing may begin their singing experiences behind their classmates in pitch discrimination and tonal memory, and may not be able to sing over a wide pitch range. This lack of practice may result in an undeveloped voice (Joyner, 1969). Experience helps a singer make the necessary changes in the vocal mechanism, for nonsingers can not adjust the parts of the larynx as rapidly or as accurately as singers (Murry, 1990).

### Gender of Vocal Model

The gender of the vocal model can present problems, for several writers say that children can best match the pitch of a female (Goetze, Cooper & Brown, 1990; Goetze, 1985; Sims, Moore & Kuhn, 1982). Male teachers who believe that their students are having problems because of the male vocal timbre may elect to use falsetto, rely more heavily on recordings, or ask a child to model singing for the class (Goetze, Cooper & Brown, 1990).

Small and McCachern (1983) say that the problems associated with vocal model gender may be negligible. Their research indicated that first graders matched pitch equally well with either male or female models, while some had problems with both models.

### Listening Skills

A lack of listening skills has been noted by instructors (DesForges, 1991; Haworth, 1991; Odom, 1991; Roberts, 1991). Teachers may need to develop an awareness for students of the difference between high and low sounds and have the children experience those sounds, before students are able to accurately imitate them. Children may need to be taught to listen carefully before they are able to hear that they are not matching pitch (DesForges, 1991).

### Accompaniment

The complexity of the accompaniment for children's singing has also been investigated in relation to its effect on pitch matching. It appears that traditional accompaniments, simple in harmonic structure, may help more than a complex accompaniment (Goetze, Cooper & Brown, 1990).

## Suggested Remedial Techniques

While the causes of the inaccurate vocal pitch matching are of interest to music education professionals, a more practical issue for them are solutions to the problem. As there are many possible reasons for the problem, there are also many different ways to help students.

### Become Aware of the Voice

One way to help a non-singer is to have the child become conscious of the voice. This can be done by touching the throat in order to feel the differences made by register changes (Atterbury, 1984) or by encouraging awareness of the different sensations in the larynx (Buckton, 1977). This may be of special help to those children who have not noticed that singing involves changing pitch, and who need help to notice the difference between high and low pitches (Swanson, 1981).

Awareness, not only of the voice itself, but of the different ways in which sounds can be made can also be helpful. When the child uses a familiar rhyme or sentence to whisper, speak and sing an awareness of vocal possibilities may be gained (Kemp, 1989, p. 12; Atterbury, 1984). Imitating environmental sounds may also help in gaining control of the voice, a necessity in learning to sing (Gould, N.D.).

### Begin Singing Instruction Early

Kindergarten is not too early to begin helping the child discover the singing voice and the coordination needed to control it since about 8% of the children in first grade who had problems singing in tune were not able to sing correctly throughout elementary school (Petzold, 1969). The kindergarten/first grade child uses the speaking voice rather than the singing voice as a matter of habit (Young, 1971). It appears that the earlier help is given to the non-singer, the better it may be for the child (Kemp, 1989. p. 11; Atterbury, 1984; Gould, N.D.).

If training in listening skills and singing is not begun in first grade, musical development in later years may be delayed (Petzold, 1969). Indeed, one of the reasons for poor singing found by Swanson (1981) was that the singers did not learn to sing freely at an early age. Franklin (1981) suggests that the inability to sing on pitch may be a form of slower musical development, similar to retarded language abilities. Teaching kindergarten children to perceive melodies did not improve their vocal accuracy or aural discrimination (Apfelstadt, 1984).

### Utilize Newly-Learned Materials

Research suggests that the way in which a child learns to sing a particular song is the way in which that song will to continue be sung, regardless of any newly-learned skills. If a song was initially sung in an out-of-tune manner, it will continue to be sung that way, even though the child has learned to match pitch and sings new songs well. It is best to use new songs and new material when teaching a child to match pitch (Roberts & Davies, 1975). Many song and speech materials can be adapted for use with any person who wants to learn to sing (Gould, N.D.). If the text appears to be detracting from attempts to sing the melody correctly, a neutral syllable may be used (Forcucci, 1975).

### Employ Feedback

Motivation and feedback are two factors to be considered when teaching children to be competent singers. If the child wants to sing correctly, and has done so, feedback from the teacher is needed to tell the student that the sound is right. With both desire and immediate teacher reaction, any good method of teaching singing which uses individual response will probably result in improvement (Goetze, Cooper & Brown, 1990).

The choice of language used in feedback to the student is a matter of concern for Odom (1991). He does not tell the child that the wrong note is being sung ("No, you are singing the wrong note"), believing that this may be taken personally and damage the child's self-esteem.

### Enable the Child to Experience Unison

Remedial instruction needs to begin with notes which the child can match. The range can then be expanded by half-steps (Roberts & Davies, 1975). Forcucci (1975) cautions against the use of chromatics, suggesting instead that the bottom half of a major scale be used, moving stepwise up and down. DeForges (1991) recommends that the non-singing child attempt to match pitches for class warm-up exercises, thereby enabling unison to be experienced when the class matches the pitch.

Once the child knows what unison singing sounds and feels like and has gained control over the vocal mechanism, matching pitch with reasonable certainty may occur (Gould, N.D.). The use of simple, slow songs, sung with increasing independence, will increase singing skills. This is also true of dependent singers, who need to 'lean' on stronger singers, but may be able to sing more and more independently with easy songs. The crucial point here is that all young singers need to always be in situations where the chance of success is high (Forcucci, 1975).

### Consider Group Size

Opinions on the best group size for singing instruction vary. R. B. Smith (1963) suggests that group instruction is probably better for very young children in the preschool classroom than is individual help.

Some children may learn more quickly in individual or small group settings (Jones, 1971) than in large groups. This may be because the fear of ridicule by classmates is either reduced or eliminated, or because the teacher has more freedom to concentrate on the non-singers and their individual problems. There is little evidence to suggest that children learn to match pitch accu-

rately in group singing (Goetze, Cooper & Brown, 1990; Goetze & Horii, 1989).

Many teachers work with the child individually (Grigsby, 1991; Gackle, 1991) or in small groups (Odom, 1991; Palmer, 1991; Godwin, 1991). While individual work may be preferred, there is rarely time to work with each child who needs help (Palmer, 1991; Godwin, 1991). Small groups, composed either of all uncertain singers or of a combination of certain and uncertain singers (Odom, 1991), are often used by teachers who are attempting to help non-singers. Small groups not only save time, but they allow the children to be supportive of each other (Palmer, 1991). When individual help is offered, it may be done after school (Grigsby, 1991), as well as during the school day. Individual work may take the form of singing games or echo singing (Collins, 1991).

Moffett (1991), Godwin (1991), Collins (1991) and DesForges (1991) work with children in a large group setting simply because that is the only time that is available. DesForges forbids any child in the class to ridicule another who is not correctly matching pitch. The feeling of security this creates in the classroom enables the child who needs help to sing freely when the teacher attempts to correct problems during class time.

**Additional Techniques**

Other techniques favored by instructors include surrounding the uncertain singer with strong singers (Haworth, 1991; Grigsby, 1991; Collins, 1991), modeling correct sounds (DesForges, 1991; Haworth, 1991), echo singing and singing games (Roberts, 1991; Grigsby, 1991; Palmer, 1991; Moffett, 1991), and encouraging the child to sing softly (DesForges, 1991; Grigsby, 1991). Tone calls, games (Swanson, 1981), echo singing and group singing may help the child learn to use the voice.

Palmer (1991) and Collins (1991) use a tape recorder in order for the child to hear the tone being produced. In this way, the student not only hears that the correct pitch is not being sung, but the gap between the desired pitch and the produced pitch is demonstrable. The kind of voice tone being produced can be more easily discussed with the aid of a tape recorder. A variation of this has the child use a hand to close one ear so that the singing may be more easily heard (Moffett, 1991). Roberts (1991) and others use a tube, PVC pipe, or vacuum cleaner hose to sing directly and softly into the child's ear.

Imagery is used by Godwin (1991) ("Sing like a cloud floating," "Sound like your little sister") and Odom (1991) (the teacher moves a finger in and out of bullseye's center as the child moves the voice). Haworth (1991) gives the child a vocal reminder ("Singing voice, please"), and uses her hands to show the child where the desired pitch is and where the produced pitch is. The child adjusts the pitch to make the two hands meet. Children can also be asked to sound like the cartoon character Tweety Bird or like the "Ho, ho, ho" of Santa Claus.

Collins (1991) cautions against asking a child to "Sing higher." This usually results in louder, not higher, singing. Requests for louder singing may also cause the children who previously were singing in a head voice to immediately drop the voice into the chest and lose the ability to tunefully sing the higher notes in their range.

DesForges (1991) maintains that the practice of seating kindergarten children on the floor while the teacher sits in a chair results in vocal strain and encourages bad posture. The children have to look up to see the teacher, tilting their chins up and increasing the tension on the vocal mechanism instead.

The children encouraged to sit and stand straight and are given reasons for the necessity for doing so. This is done with all the children, no matter what the grade level.

When asked if there are techniques which have been found to be unsuccessful, most teachers answered that each child's problem is unique and the solutions must be adjusted to the child.

Music teachers who have choruses in their schools cannot ignore the problem of children who can not sing accurately and well. The dilemma of whether or not to audition the children is cause for much debate among teachers. Teachers are adamant in their refusal to do anything that will embarrass the child. They do not want any student to feel incapable of singing, but many do audition singers (Grigsby, 1991; Palmer, 1991; Godwin, 1991; Moffett, 1991). Some equate choruses to classes for academically gifted children - an auditioned choir is for musically gifted children.

Those who do audition students sometimes use the process as a means of accomplishing other goals. Palmer (1991) and DesForges (1991) have more children who want to be in their choirs than can be comfortably handled, so auditioning is a way of reducing the number of children. Godwin (1991) uses the process to find those children who need help, and then refers the non-singers to a speech therapist or physician.

Other teachers do not audition children, accepting any child who wants to sing (Haworth, 1991; Collins, 1991). They feel that desire is more important than skill. Still other choir directors are prevented from auditioning children by the nature of the group, as in church choirs.

If a non-singer is in a choir, directors often prefer to keep the student in the group rather than cause the child's embarrassment by removal (Grigsby, 1991; Collins, 1991). The poor singer may be seated in a group of strong singers to either correct or hide the deficiencies. The teacher needs to be aware that the child may use the singing voice when in the presence of the teacher, but lapse into old, non-singing habits when the teacher is absent (Joyner, 1969). The teacher may need to keep reminding the student of the newly-learned skills until they become habitual.

Those who have given thought and time to the problem of children who cannot freely and accurately sing may not agree on the causes or the cures for the problem, but they do agree on one fundamental philosophy, stated by Gould (N.D.): Every child, barring those with a severe handicap of mind or hearing, can learn to sing.

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